CLAIMS

1. (Currently amended) A method of processing data streams in a contention-based WLAN system, the method comprising:

(A) generating two or more sub-streams corresponding to a first data stream, wherein the two or more sub-streams comprise a base sub-stream and at least one enhancement sub-stream;

(B) assigning priority to each of the two or more sub-streams, wherein at least two of said base and enhancement sub-streams have different priorities; and

(C) transmitting data corresponding to each of the two or more sub-streams based on the assigned priority, wherein:

the contention-based WLAN system conforms to an IEEE 802.11e standard and supports a quality of service (QoS) facility; and

the step of assigning comprises assigning to said at least two of said base and enhancement sub-streams QoS parameter sets corresponding to at least two different access categories of the IEEE 802.11e standard.

2-3. (Canceled)

4. (Previously presented) The method of claim 1, wherein the first data stream is a hierarchical stream and step (A) comprises partitioning the hierarchical stream based on the hierarchy of said stream to produce the two or more sub-streams.

5. (Original) The method of claim 1, wherein the first data stream is an embedded stream and step (A) comprises generating the two or more sub-streams using an embedded encoder.

6. (Original) The method of claim 1, further comprising, for each sub-stream, accumulating data corresponding to the sub-stream in a corresponding transmission queue.

7.   (Original) The method of claim 6, further comprising, for each queued data packet, (i) running a timer having a threshold value and (ii) discarding the data packet without transmission, when the timer reaches the threshold value.

8.   (Original) The method of claim 7, wherein, for each enhancement packet, the timer starts when a corresponding base packet is transmitted.

9.   (Original) The method of claim 7, wherein timers corresponding to different queues have different threshold values.

10.   (Previously presented) The method of claim 1, wherein step (B) comprises, for each of the two or more sub-streams, selecting parameters of a corresponding QoS parameter set.

11.   (Original) The method of claim 1, further comprising:

(D)   generating two or more sub-streams corresponding to the transmitted data; and

(E)   processing the sub-streams of step (D) to generate an output data stream corresponding to the first data stream.

12.   (Previously presented) The method of claim 1, further comprising:

generating two or more sub-streams corresponding to a second data stream, wherein said two or more sub-streams corresponding to the second data stream comprise a corresponding base sub-stream and at least one corresponding enhancement sub-stream;

assigning priority to each of said sub-streams corresponding to the second data stream; and

for each of the two or more sub-streams corresponding to the first data stream and the two or more sub-streams corresponding to the second data stream, accumulating data corresponding to the sub-stream in a corresponding transmission queue, wherein at least one of said transmission queues receives sub-stream data corresponding to each of the first and second data streams.

13.   (Original) The method of claim 12, wherein at least one sub-stream corresponding to the first data stream and at least one sub-stream corresponding to the second data stream have the same priority.

14.   (Currently amended) At a transmitting station in a contention-based WLAN system, apparatus adapted to process data streams, the apparatus comprising:

(A)   a device adapted to generate two or more sub-streams corresponding to a first data stream, wherein the two or more sub-streams comprise a base sub-stream and at least one enhancement sub-stream; and

(B)   a controller coupled to a transmitter, wherein:

the transmitter is adapted to transmit data corresponding to the two or more sub-streams; ~~and~~

the controller is adapted to (i) assign priority to each of the two or more sub-streams, wherein at least two of said base and enhancement sub-streams have different priorities and (ii) apply sub-stream data to the transmitter based on the assigned priority<u>;</u> ~~, wherein~~

the contention-based WLAN system conforms to an IEEE 802.11e standard and supports a quality of service (QoS) facility<u>; and</u>

<u>the controller is further adapted to assign to said at least two of said base and enhancement sub-streams QoS parameter sets corresponding to at least two different access categories of the IEEE 802.11e standard.</u>

15-16. (Canceled)

17.   (Original) The apparatus of claim 14, wherein the first data stream is a hierarchical stream and the device comprises a partitioner adapted to generate the two or more sub-streams based on the hierarchy of said stream.

18.   (Original) The apparatus of claim 14, wherein the first data stream is an embedded stream and the device comprises an embedded encoder adapted to generate the two or more sub-streams based on scalable coding.

19.   (Original) The apparatus of claim 14, further comprising, for each sub-stream, a buffer adapted to queue data corresponding to the sub-stream before application to the transmitter.

20.   (Original) The apparatus of claim 19, the controller is further adapted to, for each queued data packet, (i) run a timer having a threshold value and (ii) instruct the corresponding buffer to discard the data packet without application to the transmitter, when the timer reaches the threshold value.

21.   (Original) The apparatus of claim 20, wherein, for each enhancement packet, the timer starts when a corresponding base packet is transmitted.

22.   (Original) The apparatus of claim 20, wherein timers corresponding to different buffers have different threshold values.

23.   (Previously presented) The apparatus of claim 14, wherein the controller is adapted to, for each of the two or more sub-streams, select parameters of a corresponding QoS parameter set.

24.   (Previously presented) The apparatus of claim 14, further comprising:
    a device adapted to generate two or more sub-streams corresponding to a second data stream, wherein:
        said two or more sub-streams corresponding to the second data stream comprise a corresponding base sub-stream and at least one corresponding enhancement sub-stream; and
        the controller is adapted to assign priority to each of said two or more sub-streams corresponding to the second data stream; and
    two or more buffers, each adapted to queue data corresponding to a sub-stream before application to the transmitter, wherein at least one of said two or more buffers receives sub-stream data corresponding to each of the first and second data streams.

25.   (Original) The apparatus of claim 24, wherein at least one sub-stream corresponding to the first data stream and at least one sub-stream corresponding to the second data stream have the same priority.

26.   (Currently amended) At a receiving station in a contention-based WLAN system, apparatus adapted to generate an output data stream corresponding to a first data stream applied to a transmitting station in said system, the apparatus comprising:

(A)   a processor coupled to a receiver, the processor adapted to generate two or more sub-streams corresponding to data received by the receiver from the transmitting station; and

(B)   a first device coupled to the processor and adapted to process the two or more sub-streams generated by the processor to generate the output data stream, wherein the transmitting station comprises:

(i)   a second device adapted to generate two or more sub-streams corresponding to the first data stream, wherein said two or more sub-streams corresponding to the first data stream comprise a base sub-stream and at least one enhancement sub-stream; and

(ii)   a controller coupled to a transmitter, wherein:

the transmitter is adapted to transmit data corresponding to the two or more sub-streams generated by the second device; ~~and~~

the controller is adapted to (i) assign priority to each of the two or more sub-streams generated by the second device, wherein at least two of said base and enhancement sub-streams have different priorities and (ii) apply sub-stream data to the transmitter based on the assigned priority;~~, wherein~~

the contention-based WLAN system conforms to an IEEE 802.11e standard and supports a quality of service (QoS) facility<u>; and</u>

<u>the controller is further adapted to assign to said at least two of said base and enhancement sub-streams QoS parameter sets corresponding to at least two different access categories of the IEEE 802.11e standard.</u>

27-28. (Canceled)

29.   (Original) The apparatus of claim 26, wherein:

the first and output data streams are hierarchical streams;

the second device comprises a partitioner adapted to generate, using scalable coding, the two or more sub-streams generated by the second device; and

the first device comprises a reconstructor adapted to combine the two or more sub-streams generated by the processor to produce the output data stream.

30.   (Original) The apparatus of claim 26, wherein:

the first and output data streams are embedded streams;

the second device comprises an embedded encoder adapted to generate the two or more sub-streams generated by the second device; and

the first device comprises an embedded decoder adapted to process the two or more sub-streams generated by the processor to produce the output data stream.

31.   (Currently amended) A contention-based WLAN system, comprising a transmitting station and a receiving station, wherein:

the transmitting station is adapted to:

generate two or more sub-streams corresponding to a first data stream, wherein said two or more sub-streams corresponding to the first data stream comprise a base sub-stream and at least one enhancement sub-stream;

assign priority to each of said two or more sub-streams corresponding to the first data stream, wherein at least two of said base and enhancement sub-streams corresponding to the first data stream have different priorities; and

transmit data corresponding to the two or more sub-streams corresponding to the first data stream based on the assigned priority; ~~and~~

the receiving station is adapted to:

generate two or more sub-streams corresponding to data received from the transmitting station; and

process said two or more generated sub-streams to generate an output data stream corresponding to the first data stream;~~, wherein~~

the contention-based WLAN system conforms to an IEEE 802.11e standard and supports a quality of service (QoS) facility; and

the transcribing station is further adapted to assign to said at least two of said base and enhancement sub-streams QoS parameter sets corresponding to at least two different access categories of the IEEE 802.11e standard.

32-34. (Canceled)

35.   (Currently amended) The system of claim 31, wherein:

the base sub-stream is ~~adapted to be decoded~~ decodable independently; and

each of said enhancement sub-streams is ~~adapted to be decoded~~ decodable based on data contained in the base sub-stream.

36.   (Currently amended) The method of claim 1, wherein:

the base sub-stream is ~~adapted to be decoded~~ decodable independently; and

each of said enhancement sub-streams is ~~adapted to be decoded~~ decodable based on data contained in the base sub-stream.

37.   (Currently amended) The apparatus of claim 14, wherein:

the base sub-stream is ~~adapted to be decoded~~ decodable independently; and

each of said enhancement sub-streams is ~~adapted to be decoded~~ decodable based on data contained in the base sub-stream.

38.   (Currently amended) The apparatus of claim 26, wherein:

the base sub-stream is ~~adapted to be decoded~~ decodable independently; and

each of said enhancement sub-streams is ~~adapted to be decoded~~ decodable based on data contained in the base sub-stream.

39.   (Previously presented) The method of claim 1, wherein the step of assigning comprises:

assigning to the base sub-stream a QoS parameter set corresponding to a voice access category of the IEEE 802.11e standard;

assigning to a first enhancement sub-stream a QoS parameter set corresponding to a video access category of the IEEE 802.11e standard;

if there is a second enhancement sub-stream, then assigning to the second enhancement sub-stream a QoS parameter set corresponding to a video probe access category of the IEEE 802.11e standard; and

if there is a third enhancement sub-stream, then assigning to the third enhancement sub-stream a QoS parameter set corresponding to a best effort access category of the IEEE 802.11e standard.

40. (Previously presented) The apparatus of claim 14, wherein the controller is further adapted to:

assign to the base sub-stream a QoS parameter set corresponding to a voice access category of the IEEE 802.11e standard;

assign to a first enhancement sub-stream a QoS parameter set corresponding to a video access category of the IEEE 802.11e standard;

if there is a second enhancement sub-stream, then assign to the second enhancement sub-stream a QoS parameter set corresponding to a video probe access category of the IEEE 802.11e standard; and

if there is a third enhancement sub-stream, then assign to the third enhancement sub-stream a QoS parameter set corresponding to a best effort access category of the IEEE 802.11e standard.

41. (Previously presented) The apparatus of claim 26, wherein the controller is further adapted to:

assign to the base sub-stream a QoS parameter set corresponding to a voice access category of the IEEE 802.11e standard;

assign to a first enhancement sub-stream a QoS parameter set corresponding to a video access category of the IEEE 802.11e standard;

if there is a second enhancement sub-stream, then assign to the second enhancement sub-stream a QoS parameter set corresponding to a video probe access category of the IEEE 802.11e standard; and

if there is a third enhancement sub-stream, then assign to the third enhancement sub-stream a QoS parameter set corresponding to a best effort access category of the IEEE 802.11e standard.

42.   (Previously presented) The system of claim 31, wherein the transmitting station is further adapted to:

assign to the base sub-stream a QoS parameter set corresponding to a voice access category of the IEEE 802.11e standard;

assign to a first enhancement sub-stream a QoS parameter set corresponding to a video access category of the IEEE 802.11e standard;

if there is a second enhancement sub-stream, then assign to the second enhancement sub-stream a QoS parameter set corresponding to a video probe access category of the IEEE 802.11e standard; and

if there is a third enhancement sub-stream, then assign to the third enhancement sub-stream a QoS parameter set corresponding to a best effort access category of the IEEE 802.11e standard.